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ABSTRACT

This paper examines school finance as a potential solution for inequity, identifying problems with the conventional solution of simply providing additional funding when inequities and inadequacies appear. The paper notes that states have developed a large roster of policy instruments, or state mechanisms of achieving educational policy. California's finance system is complex, and while it establishes greater equity in funding in some provisions, it undermines them in others. School finance reforms have always been argued in terms of dollars spent on schooling. New school finance, instead, concentrates on how dollars are actually used within classrooms and schools to produce desirable educational outcomes. In California, the most recent in a long line of litigation promoting greater equity is Williams v. State of California. This case provides an example of a new school finance lawsuit, since the facts of the case (too many uncredentialed teachers, inadequate and outdated textbooks, and inadequate and deteriorating facilities) move beyond dollars to the instructional conditions students experience in schools and classrooms. The paper asserts that solutions for these inequalities may require a complex combination of top-down funding patterns with a bottom-up process based on inequities in either instructional conditions or outputs. (Contains 148 references.) (SM)

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THE UNENDING SEARCH FOR EQUITY: CALIFORNIA POLICY, THE "NEW" SCHOOL FINANCE, AND THE *WILLIAMS* CASE

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Our story starts in the early nineteenth century. The efforts of school reformers to establish publicly-funded common schools available to all children were the first steps toward realizing the ideals of equity and inclusion in public education. The common schools were intended to bring education, and a common curriculum, to all children so that they might develop the literacy, attitudes, and moral habits necessary for citizenship in the new democracy. The fact that some children could not afford to continue in school very long was not, at that point, something that could be corrected; even Horace Mann, the champion of education as the "the great equalizer of the social conditions of men — the balance wheel of the social machinery" had to acknowledge that middle class families would not have to suffer the indignity of having their

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children attend high school with working-class children, because poor children would have to be at work. So the ideal of equality developed and has persisted these many years, fueling efforts to include every kind of child — low-income children, immigrant children and what we now call English Language Learners (ELL), disabled children, homeless children. At the same time, many other factors — of which the inability to afford going to school has been only one — have conspired to keep the ideal of equality from being realized.

Around 1900, vocational purposes began to join the earlier political and moral purposes of education. Conceptions of equity changed in subtle ways: the notion of equality of educational opportunity emerged, and long debates ensued about whether the differences among children and the variation in their vocational goals required the *same* education or a *differentiated* education — college for those bound for professional positions, high school vocational education for those bound for moderately skilled working-class occupations, something else (often, the general track) for those destined for unskilled positions. On the bright side, equality of opportunity extended notions of equity, revising them to incorporate the occupational functions of schools — since the opportunity provided by schooling now increased the chance to achieve economic success. On the dark side, equality of educational opportunity has been a slippery concept since it is difficult to know whether inequalities of outcomes are due to differences in opportunities or to differences in the willingness or ability of children to take advantage of opportunities provided. And so ideals of equity have persisted, and have driven efforts ranging from finance reforms starting early in the twentieth century, to desegregation efforts starting in the 1940s, to compensatory efforts associated with Great Society programs (such as early childhood programs, Title I and now the No Child Left Behind Act), to the recent whole-school reform efforts, to various assessment-

driven accountability movements. The search for equity has been relatively constant throughout the twentieth century, based on deeply-rooted values about the political and occupational roles of schooling, but equity itself remains elusive because of political opposition, because equity is a moving target,[1] and because the concept itself is difficult.

In this paper we focus on the finance of schools as one of the potential solutions for inequity — indeed, as the solution that many advocates focus on first, even as critics complain about "throwing (away) money at the problem." Like equity itself, the efforts to reform the methods of financing schools have their own long history of political and judicial efforts, starting with the "discovery" in 1905 by Elwood Cubberly that districts had differing capacities to finance schools. The state aid mechanisms that he promoted were then elaborated in the 1930s by foundation plans, which attempted to establish minimum or foundation levels of spending. Subsequently, in the late 1960s with the wave of interest in equity, a series of lawsuits challenged the persisting inequities in spending from district to district and generated yet other funding formulas, and most recently a spate of lawsuits have argued for establishing adequacy — that is, funding adequate to establish minimum acceptable levels of schooling, reminiscent of earlier foundation plans.[2] So there's been plenty of action surrounding finance, both complaints and efforts to create solutions.

But once again these efforts have been insufficient, and inequities persist in education — ranging from the gap in test scores among different racial groups, to differences in educational attainments by income or class, to disparities in school resources including qualified teachers, appropriate textbooks, and adequate facilities.[3] When low-SES minority students go to school, they are far more likely than their middle-class counterparts to encounter teachers without proper credentials, without a degree in the subject they are teaching, and with little experience or training. Their

classrooms are likely to be overcrowded and short on desks and other necessities. One author who has researched disparities in resources noted that resource differences are clearly apparent along racial lines (Roos, 1998). He found that, "At Latino elementary schools in 1992-93 there were 254 square feet per pupil, whereas the corresponding figure for white schools was 555; 34 percent of Latino elementary schools exceeded district size goals, but no white schools exceeded these goals" (pg. 43).

There are other, less obvious inequalities in schools in poor neighborhoods. Coleman (1968) discussed inequality that is hard to see, residing in many intangible characteristics of the school such as teachers' morale and their expectations of their students. He further suggested that inequality may exist not only in terms of the educational inputs, but the influences of the school process relative to influences that may exist outside the school. Thus, it is important in discussions of resources to consider the "power" of the resources offered by the school to counter poor students' lack of access to resources outside of schools. This is especially crucial in California, where socio-economically disadvantaged students make up 47% of California's school population.

Sometimes the reason for persistent inequalities in school resources is that the efforts at equalization have been incomplete — that in fact legislatures have not produced funding methods that eliminate the differences among districts within their states. Sometimes the answer is that funding differences are not the entire explanation — perhaps not even the most important explanation — for inequities, and that other policies must be examined as well. And sometimes, it seems, the resources available are poorly spent, or wasted, or (in the worst case) embezzled in some way, so that no conceivable sum of money could improve the education of certain children. And so the

question arises once again: *Given that prior efforts at equalizing funding have not worked to produce equity, what are the next steps to take?*

In this paper we identify several kinds of problems with the conventional solution of simply providing additional funding when inequities and inadequacies appear. The first, the subject of Section I, is that states in general and California in particular have developed a large roster of policy instruments, or state mechanisms of achieving educational policy. But the finance system in California is particularly complex, and while it establishes greater equity in funding in some of its provisions, it undermines them in others. More seriously, the funding mechanisms are completely uncoordinated with other policy instruments, so that the attainment of educational outcomes — which generally requires that a number of different elements work in harmony — is undermined. Particularly when funding is necessary but not sufficient (NBNS) on its own — that is, when it has the potential to be effective as long as there are complementary policies — then solutions that operate only through funding will be inadequate. Similarly, if other policies are potentially effective but not by themselves sufficient, then single-instrument reforms will always be inadequate.

A second large problem is that school finance reforms have always been argued in terms of dollars spent on schooling. The "old" school finance — the approach to reform that has dominated since Elwood Cubberly — has concentrated on the levels and patterns of spending, and has usually neglected how dollars are used within classrooms and schools. Instead of this perspective, the "new" school finance (developed in Section II) concentrates on how dollars are actually used within classrooms and schools to produce desirable educational outcomes. One insight of the "new" school finance is that the effective use of resources is a two-stage process: It is first necessary to ascertain those practices and instructional conditions within schools

and classrooms that enhance learning. Then it's necessary to allocate resources to those practices, rather than to other ineffective uses. The implication for state policy is that, if schools are to be more effective or more equitable, the state must develop ways to assure that funds are well spent.

In California the most recent in a long line of litigation intending to establish greater equity, starting with the well-known *Serrano v. Priest* case of 1971, is *Williams v. State of California*.[4] This case is a good example of a "new" school finance lawsuit, since the facts in the case — evidence of too many uncredentialed teachers, inadequate and out-of-date textbooks, and inadequate and deteriorating facilities — move beyond the level of dollars to the instructional conditions that students experience at the school and classroom levels. The solutions for these inequalities might also be more complex than simple equalization of dollars, as the *Serrano* case sought; instead, as we argue in Section III, a more complex combination of top-down funding patterns (the current approach) with a bottom-up process based on inequities in either instructional conditions or outputs will be necessary. The *Williams* case therefore provides a vehicle for the state of California to consider more subtle and potentially more effective ways of achieving equity.

I. The Development of State Policy Instruments and the Role of School Finance

The history of K-12 education is a history of state efforts to improve the extent, quality, and equity of public schooling, moving away from the strictly local efforts that dominated until the early nineteenth century. In some cases, these developments have emerged from challenges to inequity, of which the *Serrano* and the *Williams* cases in

California are examples; in other cases they emerged from efforts to improve the efficiency of schools, part of the "movement" for efficiency that developed after 1900 (Callahan, 1962); and in part they represent efforts to improve the effectiveness of schools, notably in the efforts to induce school reform since 1983. These developments have meant that the instruments of state policy have become much more complex over the last century, and the apparatus of state government has become much more elaborate.

In their original analysis of the instruments of policy, McDonnell and Elmore (1987) concentrated on four instruments: mandates; inducements, especially financial resources, but also other incentives and disincentives like those embedded in accountability mechanisms; capacity-building, or the provision of resources (fiscal resources and human resources like technical assistance) intended to build the ability of local districts and school to provide high-quality schooling, however quality might be defined; and system-changing efforts, changing the education system in fundamental ways including vouchers, privatization, the development of new institutions and administrative structures, and the like. In many cases, specific programs combine several different instruments; for example, policies for students with disabilities combine mandates and inducements; the state's charter school mechanism includes inducements and system-changing practices; and categorical grants combine inducements (funding) with mandates limiting how funds are spent. Not surprisingly, funding is an important component — of inducements, capacity-building, and (often) system-changing. And of course instruments are often complementary to one another: mandates without inducements lead to the dread problem of unfunded mandates, and mandates without capacity-building — for example, the requirements embedded in

high school exit exams, but without efforts to improve the capacity of schools to enhance test scores— result in a stalemate.

In this section we will use a looser, functional analysis of different state instruments in California, since we want to trace the consistencies and inconsistencies among different areas of policy, and the four-part categorization is too sparse for our purposes. We will consider financing at length, and then move to three other instruments.

1. **School financing for current operating expenses** has been shaped by many independent efforts. Up to the 1960s, California had, like many other states, a foundation formula that provided more state revenue to property-poor districts than to rich districts. But the differences in state revenue were not sufficient to compensate for the enormous differences in local revenue, and in any event there was a floor of $125 per student ("basic aid") that every district received regardless of wealth, a provision with serious disequalizing tendencies. Hence, the *Serrano* suit followed, with its efforts to develop equity in expenditures per student in the state — specifically, in the original case, to bring 95% of districts within $100 per pupil of the state average.[5] The efforts to realize this goal involved several legislative efforts and several repetitions of the *Serrano* case, which resulted in the establishment of revenue limits that allowed poor districts to increase their funding at a greater rate than wealthy districts, thereby squeezing spending differentials over time. The State provides about 60% of school revenues, with 23% from property taxes, 10% from the federal government, and the remaining 7% from local miscellaneous sources and the lottery. In recent years, about 97% of California students have attended schools in districts where the revenue limit funding per student was within about $350 of the other districts (EdSource, 1998).

However, at least three other major events have intervened to attenuate these equalization efforts. Perhaps the most important was the passage of Proposition 13 in 1978, constraining the use of property taxes at the local and district levels. Since reliance on local property taxes caused the inequalities in spending attacked in *Serrano*, one might imagine that Prop 13 would have contributed to equalization by undermining the effects of the variation in local revenue. But what has happened has been more complex. Overall spending levels in California have, relative to other states, decreased because of the near-disappearance of a major tax source, contributing to the perception that resources in many California schools are inadequate; a favorite demonstration is that resources per student ($6,232 in 1999-2000) are considerably lower than the national average of $7,146. California ranked 41st overall in per pupil expenditures in 1997. In 1998, California ranked 50th in the nation in the ratio of total school staff to students (1 to 12; the US average was 1 to 9). And in the same year, California ranked 50th in the nation in the ratio of school administrators to students (1 to 504; the US average was 1 to 360).[6] In addition, policy and reform initiatives have shifted to the state level because of the lack of local resources to develop reforms, with the result that state policy and state instruments have become increasingly important. Finally, the efforts of the state to compensate for the loss of local tax revenue have often taken the form of categorical grants (described below), with less equalizing provisions than revenue limit funds. On the whole, then, the effects of Proposition 13 on both the overall quality of public education and on its equity have been negative.

A second policy was the passage of Proposition 98 in 1988. Because revenues per pupil in California had been slipping behind those of other states, the legislature initiated an amendment that now provides a specified amount of any tax revenue increases to K-12 districts (and community colleges as well). The three-part formula for

calculating the overall amount of tax revenues going to education provides increases during boom times, and protects school spending from equivalent cuts during recessions. But, of more relevance to the equity issues here, the allocation of these revenues among districts that was intended to provide a floor for school spending has instead become more of a ceiling.

The third and in many ways the most important aftermath of Prop 13 has been the explosion of state categorical grants. Categorical grants provide revenues for specific purposes; for example, there are now grants to pay for pupil testing, discourage truancy, and provide adult education, among the more than 50 grants in the state. The politics behind categorical grants are relatively transparent: an interest group finds some kind of school resource missing, and pressures legislators to provide revenues specifically for that purpose; the legislators get credit for helping pass the legislation; and the legislature as a whole can congratulate itself on directing state resources to what are presumably effective ways to spend money (an issue to which we return in Section II). But the cost of increasing categoricals, which now account for about 48% of all state aid (up from 11% in 1979) (EdSource, 2000), is that they impose constraints on local districts about how they use state funds and increase reporting requirements. In addition, because most categorical funds are distributed without regard to equalization, they undermine the equalizing effects of revenue limit funds. As a result the steady increase in categorical funds has made state revenue as a whole less equalizing.

Overall, the changes in response to the *Serrano* case, and the subsequent developments, have resulted in a state financing system that is considerably more equalizing than in most states. In the General Accounting Office analysis of the 50 states, California ranked 10th in equalization efforts for the school year 1991-92 (GAO, 1997). Furthermore, the cities in California — which arguably have the greatest needs

for increased school spending, as well as face higher prices for teachers and other personnel — have fared relatively well, at least in the sense that they have above-average levels of funding: in 1998-99, compared to a state average of $4,937 per student in California, Los Angeles spent $6,010 per student, San Francisco $6,031, Oakland $6,115, West Contra Costa $5,695, and Sacramento $5,465 — though whether these spending differences are enough to compensate for the higher needs in urban areas is subject to debate, of course. However, the state system of financing is almost surely becoming less equalizing over time, as categorical grants become more and more important relative to revenue limit funds. Finally, and most importantly, the allocation of state (and local) revenues is not designed to provide overall equity, or adequacy, of particular instructional inputs like qualified teachers, textbooks, or counselors; instead financing has been constructed through myriad random and disconnected events — the *Serrano* decision, Prop 13, Prop 98, and the many different categoricals — without an overall plan for providing equitable education, adequate resources, or education of the highest quality.

2. Facilities funding in California, as in other states, is quite independent of funding for current operating expenditures. The state has a pool of resources, raised through state revenue bonds, that are allocated to local districts according to a complex application process. But, particularly because of lags in this process, it does not necessarily allocate funds to the neediest districts, either fast-growing districts or urban districts with older buildings requiring renovation. Indeed, there's even some evidence that the funding process works against equity. In the *Godinez v. Davis* case, Los Angeles charged that the process of allocating funds to districts penalizes urban districts who have a more difficult time assembling land and ascertaining costs;[7] in response the state

set up a two-track funding mechanism, further complicating an already complex mechanism. However, this is a stopgap measure, and has not fundamentally changed the way the state allocates capital funds. The Legislative Analyst's Office has proposed a change in allocating capital funds, arguing for a flat grant of $550 per student (compared to the approximately $450 per student per year that is currently allocated), allocating state aid for capital spending on an annual basis rather than for specific capital projects as is currently the case; but they also estimate that it would cost about $6 billion for the state to bring facilities up to a standard where the flat grant could then provide for more routine maintenance and expansion. The Finance Committee of the Joint Commission to Develop a Master Plan for Education Kindergarten Through University has also proposed an alternative, one that allocates funding on a formula basis taking needs and price differences into account. But until there is some revision of capital funding, there will be no provision for equity to include any recognition of need in capital funding in this state. Instead the current system is haphazard, bureaucratically awkward, and unrelated to the goals of providing adequate and equitable education.

Furthermore, state spending decisions for current expenditures and for capital outlays are uncoordinated in any way, even though there are distinct connections between the two. One of the more common practices is for resource-starved districts to delay maintenance of their physical plant, where maintenance comes out of current operating expenditures; this in turn contributes to deterioration and then to greater needs for capital expenditures. Another frequent problem is that resource-starved districts contrive to use their capital funds for current expenditures, as San Francisco appears to have done under its former superintendent; the result is that capital funds are unavailable for building new schools and other capital projects. While these links

differ substantially — the latter may well be fraudulent use of capital funds, while the first may be imprudent but is hardly fraudulent — they both have the effect of undermining the physical facilities in districts with inadequate *current* revenues. A state system to provide adequate physical facilities in all districts would prevent the use of capital funds for current expenditures — easier said than done, perhaps — and would recognize the need for additional maintenance in allocating current revenues.

Finally, funding for capital projects is unrelated to any other element of state policy. The best recent example is the provision of state funds for class size reduction (CSR), which amounted to $1.6 billion in 2001-02. CSR has created needs for additional classrooms, especially in urban districts without excess capacity and in fast-growing districts, but funding to provide additional school facilities to support the newly-created classrooms was not included in the budget. There is in fact no mechanism in state funding for capital outlays for any modifications when another policy — here, CSR — places increased demands on facilities. This is the first of several examples we will discuss where the different elements of state policy are disconnected from one another.

3. Teacher credentials in California are established by the California Commission on Teacher Credentials (CCTC), established to ensure the provision of qualified teachers. Currently the CCTC requires that credentialed teachers have passed a basic skills test, the CBEST; have a bachelor's degree plus additional coursework from a recognized program providing either a multiple subject or single subject credential; have completed a supervised internship; and have completed a two-year induction program. In practice, however, the shortage of qualified teachers in the state has meant that many teachers work with emergency credentials, which are granted to teachers

who have met minimal requirements (a college degree and a passing score on the CBEST). In effect, the process of granting emergency credentials sidesteps almost entirely the safeguards that CCTC has developed, which is arguably a problem with the effectiveness of California policies in general.[8]

However, teachers with emergency credentials are not evenly distributed throughout the state, as Goe (2002) has shown. The reasons include higher salaries for teachers in suburban districts and better working conditions,[9] both of which draw experienced and credentialed teachers out of urban districts and into higher-income suburban districts. The result is considerable variation across districts in the quality of teachers, at least as measured by credentials. There have been few state efforts to fix this kind of shortage — for example, by providing urban districts extra funds to attract teachers, or by developing methods of attracting more individuals to urban teaching and then preparing them appropriately. There have been some efforts to enlist community colleges in preparing more teachers, through the Teacher Pipeline. But this particular form of inequity continues to grow.

Furthermore, teacher credentialing requirements and supply considerations are uncoordinated with other state policies. Again, the best example is class size reduction, which immediately increased the numbers of teachers required in kindergarten through third grade. While CSR had a provision for some staff development, it was inadequate to the magnitude of need, and CSR provided funds for additional teachers but not for increasing the salaries of veteran credentialed teachers in order to retain them in urban areas; therefore many urban communities found themselves hiring more teachers with emergency credentials in order to reduce class sizes, thereby undermining the intention of class size reduction (CSR Research Consortium, 1999). Further, school districts were forced to reallocate resources to make up the difference in their actual spending and the

CSR funds provided by the state, curtailing spending on such programs as facilities maintenance and professional development (CSR Research Consortium, 2002). Again , the lack of coordination among elements of state policy not only undermines the intent of policy, but also exacerbates inequalities among districts.

4. Textbook standards and requirements in California establish lists of state-approved textbooks, and state funds can be spent only on these approved texts. The underlying assumption is that, given the importance of textbooks in K-12 instruction there should be some sort of state supervision of the texts selected. The process of textbook approval is itself controversial, of course, often pitting pedagogical progressives against liberals. But for our purposes the important issue is that, while the state restricts how textbooks are chosen, it does not monitor how textbooks are actually used. The practices that are the subject of complaint in the *Williams* case — the fact that textbooks are frequently out of date, or there are insufficient numbers of books for students to take home — are not covered by state policy. To be sure, there are categorical grants for instructional materials, including textbooks ($173 million in 2001-02) but these funds are evidently insufficient to guarantee the adequacy of textbooks throughout the state. In addition, textbook policies are not coordinated with other policies; for example, state subject-matter standards were developed and implemented before textbooks incorporating these standards could have been available.

5. Subject standards have been developed in California, as in most other states, to specify what should be taught in each subject at different grade levels. The subject-matter standards were initiated in response to Title I requirements. They have been developed through elaborate procedures by which teachers and state officials, together

with subject-matter specialists, have convened to specify the important elements at different grade levels; there are now subject-matter standards in math, English-language arts, history, science, and visual and performing arts.[10] The process of developing these standards has been widely cited as beneficial because it required many different participants to convene and agree on what should be learned in California schools. In theory such standards promote coherence and consistency throughout the state's enormous and complex system of education, ensuring that students in every corner of the state can learn the same material, promoting a sensible progression of subject matter from grade to grade, and aligning teaching in K-12 education with the requirements in the state's colleges.

In practice, however, the implementation of these standards has been uneven at best, for a number of reasons. For example, professional development funds have not been ample to provide teachers with opportunities to develop a deeper understanding about the standards and how to incorporate them into their lessons. In addition, districts (and even some schools) sometimes have their own standards, which may be different from the state standards. This is because districts were required in the early '90s to create standards and assess students by them. But when the state created its own set of standards, many districts kept their district standards instead of routinely adopting the state standards. The result is a lack of coherence about what standards teachers are following and what standards students are learning. However, since California's STAR testing system is now focusing on developing tests that measure the state standards, it is likely that district and school standards will be banished to focus on what is to be tested by the STAR system. Furthermore, the teacher credentialing process does expose teachers to subject-matter standards both in teacher preparation and in induction, but since nearly 40% of California's first-year teachers in 2000-01 were

teaching without clear credentials, it is likely that many teachers began instructing students without having gained a sufficient understanding of the state's academic standards.

But perhaps the most damaging state policy has been the adoption of state tests, as part of the accountability provisions described in #6 below, that measure basic skills and knowledge in math and English via the Stanford Achievement Text, version 9 (SAT-9), a nationally norm-referenced test that is not aligned with state standards and which in general evaluates much lower level and more routine skills than the state standards. Together with the incentives and disincentives embedded in the state's accountability system, these tests have shifted attention away from state standards and toward mastery of a different and more basic set of skills. The process of developing a standards-based test has been slow, but it will eventually carry more weight than the SAT-9. Technical questions about the standards test exist, however, and its development has been far from an open process. And, since teachers and students have been focused on preparing for SAT-9 tests, it may be some time before they become proficient in the skills being measured by the standards-based test. For the near term, therefore, the state standards have been relegated to distinctly secondary status in the state's system of policy instruments.

6. Accountability measures have been developed in California, as in many other states, to measure student learning and provide incentives and disincentives intended to improve learning. The details of accountability systems vary substantially from state to state, and— as Mies van der Rohe proclaimed — God is in the details. The variation in the kinds of assessments used to measure learning, the support ("capacity building") afforded schools to be able to meet these standards, the specific nature of the incentives

and disincentives, and the processes by which accountability systems were constructed vary enormously from state to state.[11] The potential effects on learning vary as well.

In California, the foundation of the accountability system is the Academic Performance Index (API), which is currently based entirely on the SAT-9 tests administered in every grade. (Starting in 2001-02, an Augmented Test incorporating both SAT-9 questions and questions drawn from state standards has been used in the API.) Elementary, middle and high schools are ranked in deciles based on their API scores in two different ways: an absolute rank (among all schools in the state), and a relative "similar schools" rank (among all similar schools, where the similarity of schools is based on the proportion of low-income students as measured by numbers of students receiving free lunch, English language learners, urbanicity, parent educati... levels, etc.). As schools improve, they may move up in rank, but some other schools performing less well must correspondingly be moved down in rank. In other words, there is not room for everyone to succeed. By this ranking system, obviously, schools that *gain* in their API scores will nevertheless move down in absolute rank compared to other schools that have gained *more*. Schools with gains in test scores can receive salary bonuses for both teachers and for the school as a whole. In addition, as described below, low-performing schools are eligible for Immediate Intervention/Underperforming Schools Program (II/USP) grants, which provide their own incentives and threats. Therefore the accountability system in California works in part through publicity about the performance of individual schools, which presumably informs both parents, educators, and other public officials; and through selective incentives and disincentives, including those embedded in the API.

Starting in 2002, this accountability mechanism has been joined by exit exams that students will have to pass in English and math before they can receive a high

school diploma. Furthermore, the federal "No Child Left Behind Act" of 2001 includes additional assessment requirements. While states will be able to choose the assessments used, and can presumably use existing assessments or align them with other state policies (such as California's subject-matter standards), there is no doubt that these federal requirements will add to the amount and complexity of testing in California. The prospect over the next decade is therefore a proliferation of often inconsistent tests that are themselves inconsistent with other aspects of policy including state and federal standards.[12]

There are many problems with the state's accountability system. The SAT-9 tests are, in the view of most teachers, relatively narrow, skills-oriented tests that are inconsistent with broader conceptions of learning (including the "higher-order skills" often cited as necessary to the workforce of the twenty-first century); the pressure to teach to these tests has been unrelenting in many districts, and has in addition marginalized subjects other than English and math that are not being tested. The change scores are calculated for schools rather than individuals, so that the changing composition of schools can affect these change measures, particularly in districts with high student turnover. The numbers of students in many schools (especially elementary schools) is often low, so that scores and change scores have very high standard errors, but this fact is not adequately taken into account in API calculations. Limited-English-Proficient students are required to take English-language tests unless they have a parent request to exempt them from testing, and since most of their parents have limited English skills as well, it is difficult for schools to get these students exempted. There have been reports of schools subtly encouraging some students not to attend on the day of testing, and the incorporation of such students in shifting numbers adds another biased element to change scores. The accountability system has certainly had the power

to scare students and teachers out of their wits, but whether it improves learning in any broader sense is completely unknown.

But an equally serious problem is that the state's accountability system is uncoordinated with its other policy instruments. With the exception of II/USP, which reaches only a percentage of low-performing schools with relatively small amounts of money (up to $400 per student, in a state where average spending is about $5,000 per student), low performance on test scores does not lead to additional resources. The methods of teaching to state standards while simultaneously preparing students for SAT-9 tests have not been incorporated into state teaching standards and teacher credentialing, even though this is the central challenge teachers now face; indeed, with the proliferation of emergency credentials, inexperienced teachers face additional and conflicting challenges with no preparation. The textbooks approved by the state, which have been slowly revised to be consistent with state standards, do not (except coincidentally) incorporate the kinds of narrow skills required by the SAT-9, or that will be required by exit exams. And the development of tests is almost sure to exacerbate the inequalities among districts: districts where low-scoring students are concentrated are spending additional resources on staff development to improve test scores, and the upcoming exit exams will surely require them to spend additional resources on remediation courses to help students who have failed the exit exams to pass in subsequent rounds. So once again, an instrument of state policy that is intended to improve learning is instead, because of failure to coordinate with other elements of state policy including school finance, likely to undermine the overall equity and the efficacy of California schools.

7. Categorical programs in California have proliferated, as we noted above, and each of them is another kind of instrument of state policy — providing both resources ("capacity building") and regulations determining how these resources are spent ("mandates"). Each of them works in a different way. Here we highlight three of the most important — Class Size Reduction (CSR), II/USP, and teacher credentialing — to show in greater detail how state policies, developed in ways uncoordinated from other aspects of policy, fail to resolve inequities within the state, and often exacerbate them

Class size reduction was enacted in 1996 through SB 1777 to reduce class sizes to 20:1 in kindergarten through grades 3. It responded to the popular perception among almost all educators, parents, and policy-makers that smaller classes enhance learning, even though decades of research have failed to establish clear benefits for smaller classes — largely, we would argue, because smaller classes have the potential to enhance learning, but require in addition competent teachers trained and willing to take advantage of smaller classes, as well as adequate physical facilities.[13] The legislation also provided funding for some staff development, in order to prepare teachers to teach smaller classes more effectively; whether this provision of CSR worked as intended is unclear from the evaluations so far, which have not observed classes to see if teachers in smaller classes are teaching in different ways (for example, lecturing less, spending less time on discipline, or engaging in more personalized teaching). But what is clear is that two other requirements for reduced class sizes to be effective have been missing: CSR in turn increased the numbers of K-3 teachers required, leading to shortages of credentialed teachers; these shortages have been most severe in urban districts and those with high proportions of low-income and minority children. Second, CSR required more classrooms, and in schools that were already at capacity, this required using portables, public spaces like auditoriums, and any other available nook and

cranny to teach classes. So CSR had contradictory effects; whether smaller classes that are taught by inexperienced and uncredentialed teachers in inadequate physical facilities improve the learning of young children is unclear. The most recent evaluation by the CSR Research Consortium (February 2002) was unable to find evidence of improved learning as a result of CSR. Furthermore, the negative effects of CSR have been most serious in urban districts, so it is possible that CSR has exacerbated inequalities around the state by providing funding that suburban districts have been able to use for good effect while urban districts cannot.

II/USP is a program intended to help low-performing schools improve their achievement. Schools in the bottom half of the distribution of API scores are eligible to apply for II/USP grants if their yearly progress does not meet state expectations; in the first year of the program (1999-2000) only 430 of the more than 4,000 schools eligible were given grants;[14] in the second year an additional 430 were funded. (In some cases districts applied on behalf of their schools, so the element of voluntarism implicit in the application procedure was absent.) In each of the coming years an additional 430 schools will receive II/USP funding, so it will be a number of years before all schools that qualify for funding receive it. Then, for those accepted, there are at least four elements: (a) the school receives an additional $400 per pupil, half from the state and half from the district;[15] (b) an education plan must be devised, by a committee including school personnel, parents and members of the community; (c) a school receives $50,000 from which they must hire an external evaluator, an outside "expert" from a list approved by the state who can presumably help the school formulate its plan; (d) schools are expected to increase their API standing every year, and schools that fail to do this two years in a row are threatened with sanctions, including reconstitution. In theory, then, the different components complement one another: a plan is necessary to

direct the spending of additional funds, there is both a broad base of individuals involved in developing the plan and outside help (the external evaluator) to assist with the plan; there are standards of success (increases in API scores); and there are (somewhat vague) penalties for failing to meet these standards. In theory, this appears to be a well-crafted policy response to the problem of under-performing schools. However, the actual quality of the plans created under the II/USP has been shown to be highly variable (McKnight, 2001), and there is little evidence about whether they will actually have the impact the schools intend.

It's still much too early to tell how II/USP will work. So far, it's clear that there is substantial dissatisfaction with the external evaluators.[16] The awareness of II/USP reforms among teachers is variable, meaning that teachers may have had insufficient input in the planning stages and that principals have had inconsistent success in communicating their vision of reform to those who must carry it out. As is often the case in reforms, some teachers are cynical about its potential success, since II/USP seems to be another of the *"reforms du jour"* to hit public schools in California. Predictably enough, turnover among teachers and administrators has hampered its implementation; in some schools political conflicts and battles between teachers and administrators have impeded much reform. II/USP is a good example of the (apparently) coordinated use of several different policy instruments to attain a particular objective — in contrast to CSR, for example — but there are still other elements that will be necessary for it to succeed: longevity, to overcome the perception that it is only a transient reform; stability in teachers and leaders; an absence of distracting conflicts; high quality in all its components, including any external evaluators; district support (which has been a stumbling block in carrying out the plans for some schools); and school-wide and community support. In addition, as with all

other aspects of California's accountability system, there is consistent resistance to the narrow definition of learning embedded in the API.

Beginning Teacher Support and Assessment. As noted previously, CSR created an immediate need for thousands of additional K-3 teachers in order to implement the 20:1 class size deemed optimal by the California legislature. Teachers were enticed out of their preparation programs by desperate districts who promised them full salaries while they completed their credentialing requirements at night or on weekends. Teacher preparation programs geared up to assist teachers get the courses they needed to complete their requirements, and it has now become commonplace for California teachers to begin their teaching careers without a full credential, with no little or no supervised student teaching experience, and without having completed an induction program. And these underprepared teachers are most likely to end up teaching students in schools with high percentages of minority students, English language learners, and low-SES students. In four California districts, more than 50% of the teaching force was teaching on emergency permits in 2000-01 (Goe, 2002).

Policymakers in California have contributed to this problem through enforcing policies that make little sense under the circumstances. First, emergency permit teachers are not allowed to intern or student teach in classrooms. This rule means that an emergency permit teacher may be the teacher of record, completely in charge of her own classroom, but she is not permitted under California law to have a student teaching experience beforehand. In addition, emergency permit teachers are not supposed to participate in California's Beginning Teacher Support and Assessment Program (BTSA), because of the assumption that they have had insufficient preparation to begin the work required by the induction process. Thus, the teachers who arguably most need support, mentoring, and formative evaluation are not permitted to get it.

Some districts do manage to sneak their emergency permit teachers into BTSA, but it is likely that this practice will be curtailed as record-keeping in the CCTC becomes increasingly sophisticated.

Because of these rules, inexperienced emergency permit teachers must begin teaching without the supervision and support they need. Besides the frustration this must cause the teachers, one can only imagine the impact that these policies are having on students. Many of these teachers end up in the most challenging assignments, teaching the most challenging students, without ever having stood up in front of a classroom before, and with no formal mechanism for support and advice. They may be unfamiliar with California's academic standards for the subject they are teaching, and they may have little or no information about classroom management practices, teaching students who speak limited English, or planning lessons that both challenge and engage students. This is clearly a case where California policy for spending categorical funds has resulted in rules that harm students, teachers, and schools rather than help them.

It's evident from these examples that categorical programs can be carefully crafted, with multiple components — as in the case of II/USP. But it's also clear that the underlying politics often create big-budget categorical programs with little consideration of the complications of reform. Furthermore, while II/USP funds are targeted on districts that are in need of additional resources, most categorical programs are not funded on the basis of need and some — like CSR — appear to exacerbate inequalities. Overall, then, the proliferation of categorical programs since the passage of Proposition 13 — yet another manifestation of the shift in decision-making power from the district to the state level — has not been especially favorable to equity.

The many instruments of state policy are in some sense a response to the complexity of education, and govern different aspects of creating high-quality schools:

the need for resources, teachers and other personnel, a curriculum, some forms of assessment, and the like. But, at least in California, three major problems arise as a result of the way these instruments have developed:

• These instruments have developed in isolation from one another, often in different agencies or in different pieces of legislation that fail to take other policies into account. As a result there are many inconsistencies among these instruments. For example, current funding and capital funding are not coordinated; the development of subject standards was not coordinated with funding mechanisms to implement new standards; these new standards are not coordinated with new accountability mechanisms; policies like CSR have not been coordinated with capital funding provisions; and accountability provisions have not been coordinated with funding mechanisms, except in the provision of additional revenues to a minority of low-performing schools through the II/USP. Furthermore, it looks as though this pattern will continue: The exit exams that have begun being phased in starting in 2001, applying to the graduating class of 2004, will create new obligations for districts to provide additional help to students who fail the first time around; but these funds will have to come from existing resources since there are no proposals for the state to increase its own funding. Such "remedial" programs will be relatively larger in districts with concentrations of low-income, minority, and ELL students, exacerbating the inequalities that now exist.

Of special interest to us, and the subject of Section II, is that funding provisions are usually uncoordinated with other policy instruments. The deliberations about current funding, and the calculations of Prop 98 revenues, take place in legislative forums that are independent of the forums that decide on teacher credentialing, on state subject-matter standards, on the state's accountability system, textbook standards, and

capital outlays.[17] It's not surprising, then, that so little consistency among these instruments exists: there's no governance mechanism that can create such coordination.

• Many policies are individually necessary but not sufficient (NBNS) to create effective schools: they have the potential to be effective, but only when other complementary policies are in place. Class size reduction provides one obvious example; large amounts of spending on teacher induction which excludes teachers most in need of support is another; high levels of current spending on dilapidated facilities may be a third. The most general example is the conclusion, widely known and widely debated, that most school resources have little effect on school outcomes measured by standardized test scores. After a great deal of technical wrangling over the most appropriate methods of summarizing studies, one result has been the relatively weak statement that resources might matter under some conditions — though it isn't clear what these conditions are.[18] This implies that spending is necessary, but that in addition it's crucial to create other conditions that are also necessary for resources to be effective. (Indeed, this conclusion is the underpinning of the "new" school finance described in the next section, which is an *educational* rather than a *technical* rejoinder to the conventional proposition that resources don't make much differences to outcomes.) But if resources must be combined with other policies to have real effects, the development of state finance policy in isolation from other policies is a potentially fatal flaw.

A particular case of policy instruments being potentially useful but not by themselves sufficient to create reform is the effect of accountability mechanisms. The assumption underlying the current API system is that accountability mechanisms by themselves can improve teaching and learning either by shaming schools — when their performance is publicized in the newspapers — or through incentives and disincentives

attached to performance, including the bonuses paid in schools with high gains in API scores. Even though these incentives and disincentives are not particularly transparent, they appear to have had substantial effects on local efforts to improve API scores. But these policy instruments — inducements, in the language of McDonnell and Elmore (1987) — have not been matched with capacity-building, or changes intended to enhance the ability of schools to improve the quality of their teaching and the culture of schools to enhance student learning — again, with the partial exception of II/USP, which is certainly an attempt at capacity-building. So the state's accountability system has been lopsided, providing another set of reasons for schools to improve without giving them the capacity to do so. The alternative would be to concentrate on outcome-related incentives *plus* capacity-building — and then to define capacity in terms of the inputs generally thought necessary for effective teaching and learning, including capable teachers, adequate staff development, adequate learning resources (including textbooks and computers), and adequate facilities. When we return to specific funding mechanisms in Section III, the idea of marrying accountability tied to outcomes with accountability tied to particular kinds of inputs will surface as a potential response to the problems raised in the *Williams* case.

• Finally, the attention in state policy to the effects on schools and classrooms — as distinct from districts — has varied from inconsistent to non-existent. The largest amounts of state funding go to districts to spend as they see fit. A few state categorical programs direct resources to specific uses within schools and classrooms — for example, categorical funds for textbooks, for CSR, and for II/USP. But otherwise the emphasis on the district means that the state pays relatively little attention to how its resources are used within schools and classrooms. In effect there is a division of labor, especially in the post-Proposition 13 era, where the state concentrates on funding issues

and districts, with little choice over funding levels, concentrate on education provisions. But given this division of labor, it isn't surprising that the effects of state resources on teaching and learning at the only level where it counts — the school and the classrooms — are uneven at best.

A state with a coherent education policy would try not only to make each of its instruments of policy rationally related to learning — for example, by developing accountability mechanisms that are not as crude as the state's API — but would in addition try to align its different instruments so they are consistent with one another. This "consistency agenda" would require a different approach to state policy, one in which the different arms of state government related to K-12 schooling are coordinated with one another and make joint decisions about policy initiatives. A few other states have managed to follow this path — Kentucky is one of the most often-cited examples[19] — proving that it can be done. But in the absence of such an effort, state efforts are likely to be ineffective in enhancing teaching and learning, for reasons we continue to clarify in the next section.

II. The Perspectives of the "New" School Finance: The Effectiveness of Spending

The assumption of the "old" school finance — and of all deliberations that concentrate on the amounts of money spent on schooling — is that money is inherently a good thing, necessary *and sufficient* to improve the quality of schooling. Practitioners of the "old" school finance have concentrated on spending patterns — for example, the patterns of inequality in school spending at issue in the *Serrano* case — and have often neglected how resources are used within classrooms and schools. In contrast, the

central insight of what might be called the "new" school finance is that the effective use of resources is a two-stage process.[20] It is first necessary to ascertain those practices and instructional conditions within schools and classrooms that enhance learning. Then it is necessary to allocate resources to those practices, rather than to ineffective uses. Therefore discussions about levels and patterns of funding, always the stuff of much political debate, and discussions of how these resources are spent should always be joined.[21] This insight of the "new" school finance is not particularly new, since others frustrated with the limits of the "old" school finance have come to the same insight.[22] In addition, current efforts in school finance litigation have been trying to move beyond equity measured by funding to conceptions of adequacy, and adequacy is sometimes measured by the resources necessary to achieve certain levels of performance, thereby linking funding with outcomes (e.g., Clune, 1994; Minorini and Sugarman, 1999a).

But even if the "new" school finance is not new, its perspectives are not yet widespread, either in research, or in the practices of administrators and school reformers, or in legislation and policy-making. Analyses of school resources still concentrate on the dollars spent, rather than how these resources are used (e.g., Ladd, Chalk, and Hansen, 1999, from the National Research Council's Committee on Education Finance). Principals and other school leaders seem to lack the capacity to make cost-effective spending decisions, spending in piecemeal ways that respond to immediate needs rather than driving spending, despite school-based management and other changes that give them (some) greater power (Boyd and Hartman, 1988). Policy-makers continue to increase funding for schooling without clear ideas about how these resources will be spent. So it's worth continuing to articulate the perspectives of the "new" school finance since it will not become the dominant way of examining school resources until educators, policy-makers, and researchers all embrace it.

For starters, it is obvious that there are many ways for resources to be misspent, without making the changes in classrooms and schools that might improve learning. Resources can be embezzled, or spent on cronies; they can be spent on increased salaries without inducing greater efforts or increasing the pool of qualified teachers; they can be spent without changing practices, as when reforms fail to take hold; they can be spent on well-intentioned but ineffective practices; or, as we have stressed throughout, they can be spent on changing practices that are potentially effective but that require other reforms to become effective — e.g., computers without training for teachers, class size reduction without funds for facilities, or enhancing the orderliness of a school without paying any more attention to learning.

In many cases, resources are spent on changes whose effects are not immediate: most school reforms take time to implement, involving parents in the operations of schools, developing a cadre of teachers (teacher-leaders) committed to reform, educating a new generation of principals and of school-district leaders. Then, if a change takes place — a different initiative, a new principal or superintendent with a different priority, a decline in funding for what need to be sustained efforts — the earlier funding is effectively wasted. There are, then, many different ways in which resources can be spent without much of an effect on any dimension of learning. Therefore stability in spending — rather than, for example, the cycling of reforms that teachers dismiss as the *"reform du jour"* — is an important "resource" in its own right, though one that is difficult to provide in the usual political process.

An equally difficult problem is that certain resources are necessary for education to take place, but increasing such expenditures past some level may not further enhance learning. For example, expenditures for buildings, transportation, safety measures, sometimes food and other social services are all necessary; below some threshold of

adequacy, the lack of such resources has obvious negative effects on learning. But that conclusion does not imply that continuing to increase expenditures above this threshold will necessarily continue to improve learning. These kinds of inputs are something like fixed costs, necessary in certain amounts but not necessarily more effective above a threshold.[23] In these cases it seems particularly appropriate to define levels of adequate spending, but not necessarily to invest resources in spending above that level — that is, the adequacy rationale of recent court cases is more appropriate than the equity rationale of *Serrano*. But this involves disentangling which inputs to education have these characteristics, and treating them differently from resources that arguably continue to have positive effects on outcomes as they are provided in increasing amounts.

In thinking about the effectiveness of these different resources, the "old" school finance has either assumed that more resources are better than lower levels, or has investigated the effectiveness of additional spending through relatively crude forms of statistical estimation relying on educational production functions. The most common production function can be simply represented as

(1) $SO = f(R, FB) + u$

where SO represents school outcomes, R includes information about resources, FB measures the effects of family background, and u is an error term. In theory SO could include any kinds of educational outcomes, including competencies measured by new and "authentic" assessments as well as conventional test scores, and including *changes* in various abilities as well as *levels* of competencies; outcomes could reflect progress and attainment as well as measures of learning. In practice outcomes have invariably been measured by levels of conventional test scores. The school resources R are generally those that can be readily measured — spending per pupil, pupil/teacher ratios, teacher

experience, sometimes measures of teacher "ability" like test scores, and other school resources like library books and science labs. In theory resources R could include those accumulated over time, in a series of schools from kindergarten through the time when outcomes are measures, though a static and therefore incomplete measure of resources is conventionally used (except in Krueger, 1997). Measures of parental occupation, or education levels, or income levels are normally included to correct for the effects of family background, and occasionally more detailed information is available — for example, about reading material and other practices in the home — to capture other resources available to students. Such equations have been estimated for many different data sources, with different units of analysis — sometimes individual students, sometimes classrooms, sometimes schools or districts or even states. There's also a large literature on third-world countries (reviewed in Fuller and Clark, 1994) which departs from the American results where there are truly enormous differences among countries — for example, in the availability of textbooks — but which often reproduces many of the American conclusions.

The finding that the effects of resources are, more often than not, statistically insignificant has often been interpreted as showing that "spending doesn't make a difference" because of the relatively small and variable effects of school resources compared to the powerful and consistent effects of family background.[24] One way to challenge this negative interpretation has been the technical critique that Hanushek's summary of the literature was not properly carried out; the upshot of this technical debate has been a relatively weak statement: resources might matter under some conditions — though it isn't clear what these conditions might be.[25] A different response to the conclusion that "spending doesn't make a difference" has been the approach of "one more study," citing those new studies that do confirm a relation

between resources and outcomes. Project STAR, the Tennessee experiment in class size reduction, found substantial gains in learning, lasting at least until sixth grade, with especially high gains among black students; because the Tennessee results were presumably achieved with random assignment, they have been especially widely cited — even though random assignment broke down in this experiment[26] and there have been more carefully randomized experiments with negative effects (Shapson, Wright, Eason, and Fitzgerald, 1980). Other widely-cited results have been Ferguson's (1991) analysis of Texas districts, which found significant positive effects scores on a statewide teacher test, students per teacher, teacher experience, and teaching with master's degrees; Ferguson and Ladd (1996), which found substantial effects of school resources in Alabama, and Payne and Biddle (1999), who critiqued the methodologies of conventional production functions and then estimated an exceedingly simple and aggregate (district-level) equation, claiming to find a strong effect of spending per pupil on math achievement.

One problem with the "one more study" response is that it ignores the many serious research efforts which have failed to find significant effects — the uncomfortable fact that Hanushek tried to remind us of. A second problem is that even those studies that have found certain resources to be effective have acknowledged that they cannot tell *why* resources might make a difference. For example, Ferguson's (1991) analysis of Texas districts acknowledged that "we can only speculate what teachers with high scores do differently from teachers with low scores" (p. 477). Similarly, the Tennessee experiments could not clarify why smaller classes made a difference, and there have been different interpretations ranging from greater teacher morale, more frequent teacher-student interaction, and a greater variety and extent of student participation (Finn and Achilles, 1990) to the effect of small classes in socializing young

children to school (Mosteller, 1995, and Krueger,1997) — an interpretation that suggests that small classes would have declining effects as students become older. So the kind of empirical analysis suggested by equation (1), even when it does show positive effects of resources, may not be particularly helpful to policy-makers and educators.

A substantive or educational (rather than technical) critique of this literature — that is, one that pays attention to the conditions of teaching and learning — is that it treats the educational process as a black box, and fails to specify how resources are used. (These studies also fail to specify precisely how socio-economic status and other aspects of family background affect educational outcomes, though this point has been less widely noted.) From the perspective of the "new" school finance, spending per pupil may increase, but without knowing more precisely *how* resources are used, it is inappropriate to expect that increased revenues will increase test scores or any other outcome. Similarly, greater teacher experience might enhance learning as novice teachers develop more effective practices through trial and error, through staff development, or through collaboration with their peers; but past some level of experience these mechanisms may cease to improve the quality of teaching (especially if staff development is weak), and greater experience might even *decrease* effectiveness if some very experienced teachers are burned out rather than skilled. Therefore there's no *a priori* reason to expect experience by itself to increase test scores in a linear fashion. If teachers with more education tend to receive more degrees in their disciplines and become more oriented to coverage of the discipline, rather than learning more about teaching strategies, then additional formal schooling might not increase student learning. If pupil-teacher ratios are reduced but teachers continue lecturing in the same old ways, then again an expensive reform will fail to improve learning. If resources like library books and computers are available but go unused — or, even worse, are used in

pull-out sessions with librarians or computer specialists who interrupt regular classes — the availability of such materials might not enhance learning and might even depress it. In other words, the inclusion of certain measures of resources in equation (1) — spending per pupil, pupil-teacher ratios, teacher training and experience — *assumes* certain behavior in the classroom that may in fact be missing. To know more precisely how resources are used, direct observations of educational practices would be necessary to see, for example, whether teachers teach differently when they have smaller classes, or whether experienced teachers show signs of burn-out rather than increased facility.[27] Shapson et al. (1980), with their collection of information about teaching practices through classroom observations, provide confirmation of this approach: they found that, while teachers felt that classroom conditions improved in small classes, they did not change their teaching practices in most ways, and so reduction in class size without an attempt to change teacher practices was ineffective.

One way to summarize this critique of conventional production functions is to elaborate the formal model used. The simplest approach is simply to recognize that resources can be used to enhance various kinds of instructional conditions IC — for example, providing teachers of higher quality with more staff development, smaller class sizes with the resources to make them effective — and that these instructional conditions in turn enhance learning and outcomes of various kinds. Formally,

(2) $IC = f(R) + e$

(3) $SO = g(IC, FB) + u$

The first of these equations describes the ways in which resources are (or are not) translated into the classroom and school conditions related to learning — for example, teachers who have mastered and practiced a range of pedagogies, schools with a collegial atmosphere in which teachers provide sustained support to one another, a

school atmosphere that is purposive and orderly.[28] These instructional conditions may include both classroom-level conditions and school-level effects; the two may be complementary — for example, it may be easier for individual teachers to maintain order or high standards when those are priorities for the school as a whole.[29] The second equation describes the effects on these instructional conditions on valued outcomes of schools, both cognitive and non-cognitive.[30]

We can continue to elaborate this model.[31] One further approach (particularly emphasized by Cohen, Raudenbusch, and Ball, 1999) recognizes that students come to school with very different abilities to benefit from conventional schooling (call this student ability to benefit, or SA). This reflects differences among students in their cognitive and social preparation for schooling, in their motivation, in the expectations of their parents, in the resources and discipline provided by their parents and others around them. The variations in students' ability to benefit from instruction provides a specific way for family background to influence school outcomes, but this ability can also be enhanced by public resources — by early childhood programs, the efforts of teachers in the early grades to socialize children (as in the Tennessee results), family literacy efforts, programs to increase parent participation, guidance and counseling, mentoring efforts, and the like. Conversely, it may be undermined by conditions leading to student resistance (as Fuller and Clark, 1994, emphasize in their description of the "classroom culturalists").

Furthermore, instructional conditions and a student's ability to benefit from schooling surely influence one another. For example, teachers may respond positively to motivated students and negatively to those who are disruptive; schools provide different levels of resources through tracking or teacher assignments to students perceived to have different levels of preparation — sometimes more and sometimes less

(Gamoran, 1988; Brown, 1988). And student motivation may increase as teachers shift to more constructivist practices, or to project-based learning, or as schools create more orderly and learning-centered cultures. Formally, this means that IC and SA affect one another, or:

(4) $IC = f(SA, R, \ldots) + e$

(5) $SA = g(IC, R, FB, \ldots) + u$

(6) $SO = h(IC, SA, FB, \ldots) + v$

Compared to equations (2) and (3), this model places greater emphasis on the many effects of student engagement and motivation, which are potentially valuable resources that usually aren't included among educational resources. However, the reduced-form equation from this model is still equation (1) — clarifying once again that conventional production functions ignore the multiple processes internal to schools by which outcomes are generated. If, for example, a school allocates experienced teachers to unmotivated students and thereby enhances their engagement, but not by enough to eliminate the differences among motivated and unmotivated students, then a conventional production function will show that teacher experience reduces outcomes when it has in fact narrowed these differences.

This example clarifies another problem with conventional production functions: There's no reason to think that patterns of allocating resources and of generating instructional conditions are the same in all schools. The conversion of resources into instructional conditions, in equation (4), is a process that principals under site-based management, or parent or school-level councils, can in theory influence. Similarly, the use of resources to affect student motivation and ability to learn, in equation (5), may vary from school to school, or at least from district to district as different programs to motivate students are attempted. The attempt to estimate reduced-form production

functions like equation (1) assumes that the underlying processes within districts, schools, and classrooms are uniform. If this is not the case, then the reduced-form coefficients will be weighted averages of the coefficients for individual districts or schools, and could readily average positive and negative coefficients and find effects to be close to zero. Thus one point of elaborating the processes by which schooling outcomes are achieved is to focus our attention on the different ways individual schools (or individual teachers, for that matter) can use the resources they are given.

A second problem with conventional production functions is that they don't help researchers and educators think about the *interactions* among different variables. As we have consistently pointed out, many conditions necessary for effective learning may be potentially effective but are not by themselves adequate (NBNS again). For example, from equation (6), teachers skilled in constructivist methods (one element of IC) will not be effective if students have been prepared only in behaviorist classrooms (part of SA) and do not work well under the less obviously disciplined conditions of a student-centered classroom; either teachers have to re-socialize their students, or they may revert to more conventional teaching. If there needs to be an equilibrium between teachers' approaches and students' expectations,[32] then neither is effective without the other. Similarly, reduced class size might require staff development in order to enable teachers to change their approaches, as well as a supply of qualified teachers and adequate school facilities; to use computers effectively, teachers almost certainly require more staff development; and many reforms intended to reshape teaching fail because of the lack of staff development, or principal support, or stability, or assessments that are consistent with their goals. A congruence among teaching staffs, principals and other administrators, district policies, and state policies is often necessary, and reforms can fall apart when a school takes one route while the district tries to impose another. But

the linear statistical techniques used by researchers are not good at detecting the influences of variables that are jointly necessary, and so again conventional production functions are also liable to misstate what happens within schools.[33]

Obviously there are many data problems in thinking about how to estimate equations (2) and (3), or alternatively (4), (5), and (6). Outcomes are usually measured by conventional tests scores rather than more varied measures of learning; gain scores, or changes in learning, are rarely available; measures of instructional conditions IC and students' ability to benefit from instruction SA are not widely available; few data sets provide any information on the *cumulative* experiences and resources of students. Therefore these equations may be more useful as metaphors for or conceptualizations of the processes underlying learning, to focus the attention of researchers, educators, and policy-makers on the important issues, rather than as equations that can be statistically estimated. In this spirit, there are many possible way for researchers to examine the use of resources in classrooms; for example, the tactic underlying Goe (2001) is to examine the effects of a sudden increase in resources available through II/USP, and to see whether resources are used to change instructional conditions (IC) in ways that are arguably effective in enhancing learning (from equations 3 or 6), or whether they are spent in ineffective ways. In addition, there are many implications for educators including principals: a "new" school finance approach to school-level budgeting is to make sure all spending at the school level is driven by educational plans, as II/USP suggests, rather than spending money haphazardly as many schools seem to do.[34]

But the implications we want to explore here are those for policies enacted by states. If the "new" school finance is a particular perspective at this stage, rather than a set of concrete recommendations, how can it be useful?

One implication is that a simple question, or thought experiment, would be valuable before many policies are enacted: What will happen within schools and classrooms if a particular change involving additional resources is made? The popular idea of class size reduction provides a good illustration. While some teachers may be able to use smaller classes to teach in different ways, others may not have much idea about how to modify their teaching in smaller classes — so some staff development might be an appropriate complement. The shortages of qualified teachers that have materialized, especially in urban districts, could have been foreseen, and so a teacher recruitment component or moratorium on transfers could have been added so that more teachers could be prepared and so that the new, emergency permit teachers would not all end up in the most challenging schools. And the need for additional space that has constrained so many California districts was relatively clear from the outset. Therefore the pallid results from initial implementation, and the need to recruit and prepare teachers as well as to support school construction (CSR Research Consortium, 1999; Stecher and Bornstedt, 2000), could have been anticipated and forestalled by reallocating resources within this reform.

A similar thought experiment could be applied to the current efforts that we (and the British) call "naming and shaming." Many states have begun to rank schools and districts based on conventional test scores, and to publicize the low performance of the "worst" schools — a process of shaming. These are not necessarily the worst schools in any sophisticated sense: they typically have the largest proportion of immigrant and low-SES students, not surprisingly given the power of family background, and "naming and shaming" has often added to the humiliation of those groups. Such policies have then provided some "solutions" for low-performing schools ranging from reconstitution — the threat to replace all staff — to requirements in many districts for

low-performing schools to come up with their own self-improvement plans, to additional funds — though these improvements usually seem vastly inadequate to the task of reforming schools. How precisely will these policies change the practices within classrooms? Will the demoralization among teachers outweigh the impetus to teach more diligently? Will the need to show improvement on test scores lead to more narrow teaching to the test, at the expense of the higher-order abilities that so many educators and business representatives have championed? Can schools without any slack resources, or that are thought to be low-performing, create their own improvement plans? Will the shaming process motivate students to work harder, or will it demoralize them too? Unless these kinds of questions can be answered unambiguously, it's hard to see how "naming and shaming" can lead to the improvement of instructional conditions within schools and classrooms — and these questions have rarely been posed, much less answered. The issue is not what answers researchers or advocacy groups would give to these questions; the question is what answers policy-makers themselves would provide, and whether the need to answer such questions would cause them to think about proposed policies more carefully. Paralleling environmental impact statements, one could envision Classroom Impact Statements required to justify major policy enactments, in order to focus attention to these issues.

A corollary is that the "new" school finance asks policy-makers to think about the *complementary* policies required to change outcomes, rather than unitary changes. These almost always would take the form of resources plus some additional requisite — money for computers *plus* resources for professional development, class size reduction *plus* teacher recruitment, the creation of smaller schools (or schools within schools) *plus* resources for construction costs and a vision of how teachers and students will interact differently. The current standards movement provides incentives for improvement —

as does "naming and shaming" — but often without providing the intellectual or financial resources to respond to these incentives. Little or no attention is paid to implementing new policies. In many cases, resources plus technical assistance may be necessary, in order to enable schools to implement reforms successfully. And in many successful reforms in Section III, a central vision — or vision plus resources — was necessary.

To be sure, sometimes policy-makers do think in these ways. A number of court cases involving school finance have led to broader legislative reforms — implicitly (and sometimes explicitly) assuming that reshaping the allocation of money without reforming other school practices would be insufficient. Examples include the 1984 reforms in Texas (McNeil, 2000), the 1990 reforms in Kentucky (Odden and Picus, 1992; Adams, 1997), and the 1991 reforms in New Jersey, in which legislators were explicitly unwilling to provide any more resources to urban districts without several accountability measures (Firestone, Goertz, Nagle, and Smelkinson, 1994). But legislators do not routinely create legislation incorporating several instruments, as class size reduction illustrates all too clearly. Often when policy-makers increase resources for a particular purpose there seems to be an imbalance between the central policy and its complements — too little professional development (or professional development of the wrong kind), too little technical assistance facing too many implementation problems, too little vision, or a vision that can be variously interpreted and therefore can become diffuse and impotent. Therefore the perspective of the "new" school finance would try to establish a more careful balance among the complementary elements of a reform involving resources.

In terms of the instruments of policy, however, we come to a central problem. The existing state funding mechanisms for schools (and public colleges and universities

too) allocate most of their money through general grants in aid, without restrictions on local spending; local revenue is raised through property tax mechanisms, and the amount but not the form of revenue is the main issue. But the "new" school finance, more concerned with spending resources in ways that affect schools and classrooms, would constrain funding — for example, by providing categorical rather than general aid, or by providing funding through constrained pilot programs designed to replicate successful practices, or by providing some unconstrained funding along with some constrained funding (e.g., for technical assistance or staff development) to make sure that resources change classroom practices. However, the approach of categorical funding is contrary to the devolution of control to the school level, and contrary to the tactic of allocating principals more discretion over funding so that they can better learn to allocate resources to the most effective practices.

And so we see at least two contrary proposals for "new" funding mechanisms that are more concerned with outcomes. One is exemplified by the work of Clune (1994), Duncombe and Yinger (1999), and the reforms in New Jersey: the first step would be to determine how much more funding is necessary for high-need schools and students, and the second step is to allocate these funds with incentives (such as elements of performance-based funding) to spend these resources effectively. This is a centralized or top-down approach, with the central authority (district or state) determining needs and creating incentives. Implicitly, these plans start from the position, based on the school effectiveness literature and other arguments, that adequate levels of resources are necessary but also require other changes to become effective. The first task is to define what "adequate" resources are, the subject of some effort over the past few years (e.g., Minorini and Sugarman, 1999a; Guthrie and Rothstein, 1999). The second task is to try to promote the sufficient conditions for

effective schools, usually by imposing some outcome requirements measured by conventional test scores (with all their well-known problems), or by requiring reviews and plans like those in New Jersey. The possibilities for incorporating incentives to improve instructional conditions have not been explored so far, and so these funding proposals fail to link funding in any way to changes within schools and classrooms.

A second, more bottom-up approach is the proposal of Miles (1995) and Miles and Darling-Hammond (1998), in which individual schools develop their own reform strategies and then find the resources necessary for them (see also Odden and Busch, 1998). In many cases, schools may be able to reallocate existing spending, converting "inert" to "active" resources — for example by replacing non-teaching personnel by classroom teachers to reduce class size and allow all teachers to know their students well. Only after that would schools search for new funding, either from outside sources (like foundations) or from new public resources. In effect, this approach allows the school rather than the state legislature to define what "adequate" resources are, and then relies on the vision behind the reform to assure that the resources are effectively spent. This kind of reform-driven funding — where schools with particular visions and specific funding needs apply for special-purpose funds — also underlies the various local education funds around the country, like the Boston Plan for Excellence that provides mini-grants for schools in the midst of reform projects (White, 1999). These funds tend to provide resources for relatively specific reform purposes upon application, so that funders can judge the clarity of vision and strength of the reform proposal before allocating any resources. However, this assumes that the proposals really are being judged by some adequate standard, rather than simply passed on. In addition, reforms require careful attention to implementation, and any workable plan

should include details of how the plan will be carried out and through what mechanisms.

The top-down funding mechanism is driven by the need to provide basic funding and the incentives for effective spending to all schools. The nature of the incentives is itself an important policy choice: while only some rough incentives tied to outcomes (the API) are used in California, of course incentives could be tied to various inputs as well. The bottom-up approach is more appropriate for determining the resources that are necessary in specific schools, in order to carry out the reforms chosen by the school and its community. It's this second component, in addition, that provides the evidence about *how* resources are spent at the school and classroom levels; that can understand the complementarity among different resources and specify the combination of resources that are individually necessary but individually insufficient; that can adjust resource needs to the particularities or specific schools — the special conditions of students, or of the physical plant, or the precise combination of teachers who have ended up there. The second, bottom-up component is what converts an "old" school finance plan, based on formula allocation of funds, into a "new" school finance approach, reallocating funds according to the conditions in particular schools and classrooms.

Again, there is a characteristic problem in the "bottom up" component of any school finance plan. This element may be effective for those schools with clear visions of reform and change, but it doesn't provide any direction for schools that are too disorganized, or harried, or internally contentious, to develop such visions. The II/USP program presumably gets around this problem by funding an external evaluator, though the variable quality of these evaluators obviously undermines their helpfulness. One question is then whether some hybrid approach is possible, avoiding the inequities

of the bottom-up or reform-driven funding mechanism while still providing discretionary resources for schools with clear visions, and providing some incentives for reform for the most disorganized schools. One possibility, for example, might be to structure a three-part funding mechanism:

(1) A formula would allocate resources to individual school accounts, where — following the current logic of adequacy in school finance — more resources would be allocated to schools and districts with higher student needs.

(2) Schools could spend some relatively high fraction of these resources by right, though they would be subject to performance standards and incentives, as in top-down approaches.

(3) The remaining fraction of funds in their account (perhaps 10 percent?) could be accessed only with a multi-year improvement plan emphasizing spending that would enhance classroom and school conditions.

Schools with inadequate performance might have higher amounts in this "discretionary" account, or they might be provided additional technical assistance; this could potentially get around the problem of the neediest schools being unable to apply successfully for the amounts in their discretionary account. Then equity would be defined by the total resources in a school's account, though actual spending levels might differ from these amounts. If a school failed to qualify for all the funds in its account, it would be partly to blame for not receiving all the resources it could have had, and it would have an incentive to put together a coherent school improvement plan.

Such a strategy places much greater burdens on district or state officials (or perhaps county officials) to monitor performance and evaluate improvement plans than is now the case; the feasibility of such careful monitoring for all 1290 schools currently participating in the II/USP in California seems remote, at least for now. But this is the

spirit of the "new" school finance — that in the end resources will be much more effectively spent if some fraction of existing funds are reallocated to allow more careful consideration, by individuals within a school as well as "outsiders,"[35] of how resources should be used.

Many specific mechanisms of state and district policy mentioned in this section — the consideration of how policy changes are likely to affect school and classroom conditions (or Classroom Impact Statements), the creation of incentives for schools to spend resources well, the specific procedures for school improvement plans — require much more judgement about the quality of schooling than is evident in current debates about finance, which tend to emphasize the technical details of funding formulas. But that too is the spirit of the "new" school finance — that policy-makers should start to worry not only about the allocation of resources, but also about how those resources are spent. This in turn requires a certain kind of politics to emerge, one concerned with the quality of education rather than the division of the spoils.

III. The *Williams* Case from a "New" School Finance Perspective

Virtually all of the court cases around school finance that have been brought at the state and federal levels have emerged from an "old" school finance perspective.[36] After complaints about the inadequacy of resources in low-wealth school districts, they turn to a reallocation of dollars among districts as the appropriate solution. (Somewhere in most of these cases the "cost-quality" debate, or the results from education production functions like those in equation 1, is reviewed and then effectively dismissed — but this is again an "old" school finance statement of the issue since there is little investigation about what happens in schools and classrooms.) The question that

has then followed is whether the state legislature would achieve sufficient equalization of dollars among districts, or whether the legislature would fail in this task and then have to be sued again. States have varied in the effectiveness of their legislative reforms (GAO, 1997), as a result of the nature of the underlying court decisions as well as the nature of state politics.

The case of *Williams v. State of California* is somewhat different, in our interpretation. The complaints in the case focus not on the inadequacy of resources denoted in dollar terms, but rather on the inadequacy of resources at the level of schools and classrooms — particularly the lack of credentialed teachers, the lack of adequate numbers of up-to-date textbooks, and the inadequacy of physical facilities. These are all elements of instructional conditions IC in equations (2) – (5) above; arguably they are the kind of instructional conditions that have positive effects on outcomes including test scores, but also on more meaningful outcomes like learning in broader senses, persistence, and identification with schooling and its role in preparation for adult life. The complaint focuses on schools and classrooms, not on districts, so the reforms must occur at the level of individual schools and classrooms, rather than simply allocating more dollars to particular districts (though that might be a necessary if not sufficient condition for reform). The *Williams* case is, then, a "new" school finance case, and its solution should follow the pattern of a "new" school finance solution. An "old" school finance solution, following the pattern of *Serrano*, might deliver more resources to the districts that are the focus of complaints in *Williams*, but it would not ensure that these resources were spent on improving the conditions within schools and classrooms that are the basis of the complaint.

We note that the *Williams* case complains about only three kinds of instructional conditions — teacher credentials, textbooks, and physical facilities. These are no doubt

important, but attention to a fuller range of instructional conditions would also include such elements as the majors of specialist teachers; teachers' coursework in appropriate pedagogy; their ability as measured by verbal scores or other standardized tests; their race, particularly in districts with many minority children; staff development, especially mentoring programs for new teachers; the interactions among teachers and use of common planning time ; the nature of student-teacher interactions, and of personal relationships generally within a school (one aspect of "climate"); the introduction of effective teaching practices including constructivist methods; the use of time; the variety of school offerings; other dimensions of school climate including its orderliness and emphasis on learning (rather than social interactions, for example); the stability of students, teachers, and administrators; and many different dimensions of student behavior and ability to benefit from schooling (SA in the equations above).[37] The *Williams* case may represent an important first step in equalizing (or establishing adequate levels of) some important instructional conditions, but it will be only a start. However, the reforms we suggest would be appropriate to any number of instructional characteristics, and could therefore be extended either as the state decided to focus on different dimensions of schooling or — more in keeping with the spirit of the "new" school finance emphasis on local conditions — as individual schools emphasize other instructional conditions as necessary to achieving their vision of improvement.

From the standpoint of the *Williams* case and its contention that certain educational inadequacies in local schools are the responsibility of the state,[38] it may not matter much what the cause of any inadequacy is. But from the viewpoint of reforms, it matters a great deal since the solution must address the specific cause. In particular, any inadequacy in instructional conditions could be due to one of at least seven different causes: (1) levels of state and local resources that are inadequate generally, so that all

districts experience some kind of inadequacy; (2) the failure of state and local funding to recognize differences in need among districts and school so that schools with high levels of need — for example, schools in old and dilapidated buildings — are unable to provide adequate instructional conditions; (3) the failure of state and local funding to recognize differences in costs among districts so that districts with higher costs — for example, districts who need to pay teachers more in order to attract sufficient numbers of credentialed teachers, or districts with high costs for land acquisition and construction — are unable to provide adequate instructional conditions; (4) the failure of districts in their methods of allocating resources to individual schools[39] to recognize differences in needs or costs; (5) the retention of too much money at the district level, often attacked as "administrative bloat"; (6) the incompetence of local districts in conveying resources (including categorical funds from state and federal sources) to their schools — for example, conveying funds too late in the school year for them to be well spent; (7) the inability or unwillingness of specific schools to spend whatever resources they control appropriately. Top-down solutions can handle the first three of these problems, like changing the level and patterns of state funding; but they can do nothing about the last four problems. Therefore — as in all "new" school finance policies — some bottom-up mechanisms are necessary first to identify and then to correct inadequacies at the school level.

One such mechanism among many that might be feasible would have the following three stages:

(1) A top-down formula would allocate resources to individual school districts, where — following the current logic of adequacy in school finance — more resources would be allocated to schools and districts with higher student needs, like those with higher proportions of low-income students, ELL students, and students with

disabilities. Indeed, this is precisely the approach that has been recommended by the K-12 Finance and Facilities Working Group of the Joint Committee to Develop a Master Plan for Education — Kindergarten Through University, based on an adequacy approach that has been developed in Oregon (Legislative Council, 1999). This approach requires a specification of the inputs that are deemed necessary for an adequate education — a specific student:teacher ratio in different grades, a student:counselor ratio, resources for specialist teachers (librarian, music teachers, etc.), adequate funds for building maintenance, alternative programs for special needs students, instructional improvement and curriculum development support, and the like. An additional wrinkle that could also be included is some variation for different costs: several states including Texas and Wyoming have incorporated cost indices into their formulas, though the technical details of computing such indices are subject to considerable debate.[40]

(2) The State would specify targets for both outputs and inputs that it expects districts to meet. The outputs now specified by California are only those in the API, of course; a new and improved API would include more subtle measures of learning, multiple measures of learning beyond those in math and language arts, and measures of progress and attainment as well as learning. The inputs would include those specified in the adequacy formula, including teacher ratios and qualifications, books and computers, and the like.

(3) Each district would generate an annual report describing whether they meet each of these input and output standards, for each of the schools within a district. (We note that the development of a reporting system for information on each school, such as Rhode Island has developed,[41] would be highly beneficial.) If the district does not meet one or more of these standards, the district would present a plan for meeting such

standards within a certain period of time. Then if any group — including but not limited to parent groups, community advocacy groups, teacher groups, or student groups — believes that the state standards are not being met in a particular school, their first obligation is to follow the Uniform Complaint Procedures in order to inquire of the district whether there are plans to correct the issue. All complaints would have to provide substantial evidence about the nature of the violation, since frivolous cases should be discouraged.

If the district's response fails to resolve the problem, the group could then bring an appeal to the county office of education or some other agency of the state, again providing sufficient evidence to justify its case of failing to meet state standards. The county office (or other agency) would then have the authority to investigate the complaint, determine its validity, and investigate which of several possible causes — and therefore resolutions — is appropriate. These possible causes might include any of the seven potential causes described above (and probably others we have not thought of). In any of these cases, the county office of education would develop a plan, with the cooperation of the district, to identify the source of the problem and the proposed correction. In the event that inadequate funding is the issue, then this would trigger additional resources from a contingency fund to be established by the state. In the event that the problem lies in district administration, the county office would initiate a plan to correct the problem, including but not limited to reforming administrative procedures, providing staff development for district administrators, and removing administrators deemed to be incompetent.

The third step of this procedure — the development of a procedure to trigger a state-sponsored investigation, based on either inputs or outcomes — is similar to the procedure now in place under AB1200, where a county office (or a local district) can

trigger an investigation by the Fiscal Crisis and Management Assistance Team (FCMAT), a public agency funded partly by the Department of Education and partly by districts that use its services. The II/USP program is also, roughly speaking, a triggering policy, where low performance on the API can trigger additional funds and the other requirements of II/USP — though evidently the trigger is not automatic since districts have to apply and since only a fraction of low-performing districts receive II/USP funds.

In addition, several other states have developed such triggering mechanisms. For example, in Colorado, districts identify schools that are in need of improvement, based on test scores; extra funds are provided to schools to assist them in making improvements; then the local board of education makes a determination about how best to help the school, frequently resulting in conversion to a charter school using a "proven" academic program. Connecticut has a testing system that provides information to schools so they can determine where improvement is needed; low-performing schools are then given additional state resources including professional development funds, pre-schools, full-day kindergartens, and reduced class sizes. Massachusetts provides targeted assistance to low-performing schools in the form of Academic Support Services Grants and After School Program grants. North Carolina identifies low-performing schools based on poor test performance; the state then provides these schools several additional resources including needs assessment and evaluation through a Needs Assessment Team, which provides continuing advice to and monitoring of the school — similar to the investigative process in step (3) above. (Unfortunately but predictably, the state lacks sufficient resources to provide the comprehensive efforts necessary to all schools that need it.) Kentucky, probably the most-cited state in the current reform movement, has delineated seven capacities that a

common education should foster.[42] Kentucky is also frequently cited as a lesson in coherence, since it considered the interactions of all of its policies because of the school funding case (*Rose vs. Council for Better Education, Inc.*) that resulted in the entire state education system being declared unconstitutional. During the formation of their new plan for education, they paid special attention to capacity-building, and sought to change everything at once: teaching methods, what is taught, how student achievement would be evaluated, school governance, and school finance. Texas has developed a particularly comprehensive measure of student success, the "Academic Excellence Indicator System," including tests scores on a state test (the Texas Assessment of Academic Skills), graduation rates, retention rates, and expulsion rates; if districts score poorly on this comprehensive measure, then they are designated "academically unacceptable."

Finally, federal legislation — the No Child Left Behind Act — will require that districts respond to low-performing schools by providing additional assistance. Students in schools with two years of poor performance will be given school choices within the districts, while students in schools with three years of poor performance will receive supplemental education services chosen by parents. After four years of poor performance a school must take "corrective actions" including replacing teachers or the curriculum.

Therefore the notion of low performance triggering some kind of corrective action is familiar, from both state and federal policies. The advantage of this three-part funding mechanism is — in keeping with the "new" school finance perspective that money is potentially effective but not necessarily effective by itself — it does not assume that state money is spent well and wisely at the local level. Instead, it provides some rough guidelines, contained both in the top-down funding mechanism based on

adequacy calculations and in the input standards, for how funds should be spent. Then the triggering mechanism provides a way of enforcing the input and output standards, by allowing a complaint procedure if districts do not meet expectations about inputs and outputs. For the problems identified in the *Williams* case, this three-part funding mechanism would in the first stage provide more resources to high-need districts, including the districts in which many of the *Williams* plaintiffs live; but in the event such resources failed to correct inadequacies in schools and classrooms, the third stage would provide a way first to identify the problem and then to devise a response. And the response could be tailored to specific situations, rather than being the relatively blunt instrument of a statewide funding formula; it could take into account the interactions among different policies, including the identification of cases where certain reforms including additional funding need to be accompanied by other kinds of changes.

One other bottom-up mechanism would be potentially important in improving local schools, in assuring greater equity in the allocation of the resources that matter at the school and classroom level, and in generating information for further policy-making. In England and a number of other countries, inspection processes create ways of examining — literally inspecting — the quality of individual schools and classrooms (Grubb, 2000; Wilson, 1996).[43] While inspections system vary infinitely in their details, they most often assemble a team of inspectors, some from outside a school and (often) some from inside. These individuals are expert not only about education in general, but also in specific subject areas (English, biology, elementary teaching, special education, etc.). During a period of inspection they collect a variety of information about a school, interviewing administrators, faculty, parents, any governing committees (including school-site councils) as well as collecting more conventional information about

spending, teacher qualifications, the curriculum, and so forth. A crucial step in the inspection process is the observation of classes and of other elements of the school (playgrounds, assemblies, after-school programs and the like), to collect *direct* information about the quality of instruction, academic standards, the competence of teachers, the climate of the school, the interactions among students and between students and teachers, the adequacy and condition of spaces and buildings, and the appropriateness of textbooks, computers, and other instructional materials. The inspection visit therefore collects information that is normally hidden from public scrutiny in American schools — including, we should note, information about the quality of teachers, the adequacy of textbooks, and the state of physical facilities that are at issue in the *Williams* case.

The use of this information is a crucial and obviously sensitive aspect of inspections. In some institutions — for example, the Further Education colleges in England, remarkably like our community colleges — the emphasis is to provide information so that individual institutions can improve; the emphasis is on institutional improvement, not on laying blame on specific teachers or administrators. Because individual inspectors develop enormous expertise from examining many institutions, they can provide not only criticism but also suggestions for improvements. Over time, the inspectorate develops collective expertise not only in specific subjects, but also in "corporate" or institutional areas like the use of space, the maintenance of order, fiscal procedures, and hiring practices; this expertise is then made available through publications, through consultation with other colleges, and through the inspection process itself. In other cases, however — and the elementary-secondary inspections system in England is a sorry example — the process is used as an accountability system to criticize individual teachers, to belittle individual schools, to fire administrators, to

reconstitute schools, and in general to make educators feel demeaned and despised. The obvious lesson is that inspection systems need to be carefully structured and developed in a climate of support: they have enormous potential for generating the information necessary to improve all schools, focusing on what matters most in schools and classrooms; but they can also be enormously destructive under the wrong conditions.

A final element is critically important, for this or any other approach to the inequities that persist in California education: stability of state policy. The last twenty-five years have seen a remarkable array of changes, some of them large and cataclysmic (like Proposition 13 and the recent development of an accountability system), some of them smaller in their effects, like the development of many categorical programs including such *"reforms du jour"* as AB 1275. The instability of state policy — particularly when laid on top of instability in district policies, instability in all revenue sources, the mobility of district and school personnel in urban districts, and the extreme mobility of low-income students in particular — has created conditions in which schools limp along from year to year, adjusting as they can to new mandates (including ones that come without adequate funding), with teachers justifiably cynical about the *"reform du jour"* and happiest when they can close their doors and leave the noise and confusion behind. Under these conditions the prospect of long-run reform — of carefully identifying the reforms necessary in a school, getting teachers (and parents and students) to accept these reforms, making the necessary changes and then institutionalizing them so they don't vanish when personnel turn over — is a fantasy. It would be worth a great deal, under these conditions, for state policy to develop some rational and reasonable approaches to equity, and then to stay with these approaches for long enough to institutionalize them. Whether politics in California is up to the challenge of stability remains unclear.

The issues of equity in education which began this paper are not about to vanish. The claims of equity are too deeply rooted in American education, and the consequences of inequity — the miserable conditions in urban schools, the persistence of achievement and other gaps including the black-white test score gap, the Latino-Anglo attainment gap, the differences in college access, the persistent effects of family income and family background on every imaginable educational outcome — are unacceptable. Earlier "simple" efforts to undo inequity — foundation plans, desegregation, the funding of specific compensatory categorical programs, the generation of equity and adequacy lawsuits — have evidently not been enough to overcome these inequities, and so a more complex approach is necessary in the unending search for equity. In that effort, the insights of the "new" school finance and the pressures of the *Williams* case may be useful in pushing us to a new stage of equity in California schools.

FOOTNOTES

[1] By this we mean that the increasing income inequality since the early 1970s, the increasing amounts of immigration, and the increasing responsibilities to disabled children have made the challenges of achieving equity more difficult, not less.

[2] On the distant history of school finance see Grubb and Michelson (1974), Ch. 1. On the legal battles since the 1960s and the consequences, see Minorini and Sugarman, 1999b; on the recent adequacy cases see Clune (1994), Minorini and Sugarman (1999a).

[3] Complaints about inequities have often taken the form of extended anecdotal evidence; the *Williams* complaint joins a long line of such efforts including Wise (1968), Coons, Clune, and Sugarman (1970), and most recently Kozol (1991).

[4] The *Williams* complaint can be found at http://www.aclunc.org/students/ca-school-complaint.html.

[5] By the mid 1990's, the general purpose (revenue limit) funding was within about $300 for 96% of California's students (EdSource, 1995).

[6] 1998 figures from NCES Education Finance data, available through their website.

[7] There may be an issue of district competence here, a subject to which we return in the approaches outlined in Section III.

[8] The question of whether teacher credentials improve the quality of instruction has been hotly debated; the evidence is reviewed in Goe (2002). Goe's results show negative effects of both emergency permits and being a first-year teacher on SAT-9 scores in California schools.

[9] "Working conditions" is a euphemism for the difficulties of teaching in urban schools where students are frequently disruptive, hostile to teachers, and unengaged in learning. There is fierce debate whether this is the fault of students and their parents, or of teachers who don't understand the backgrounds of their students, or of a profound mismatch between the culture of schools and the culture of low-income and minority families. We won't resolve this dispute here, except to note that given the long-standing nature of this problem, neither California nor any other state has taken specific steps to resolve it, though there is frequent discussion of paying teachers in urban districts more as a form of "battle pay," itself an unlovely euphemism.

[10] To download standards, go to http://www.cde.ca.gov/standards/.

[11] A good survey of accountability systems in the 50 states is Goertz, Duffy, and Le Floch (2001). However, a caution is in order: because the process of collecting information from 50 states is so complex, and the nuances of state policies so difficult to master, there are inevitably errors in such surveys.

[12] There have been efforts to develop federal subject-matter standards, similar in conception to the state standards in California and other states. However, many of these have collapsed because of battles over content and pedagogy; the battles over the history standards were perhaps the most inflammatory, as one might expect.

[13] This is not the place to review the endless debate over the effects of class size. However, we note the evidence in a well-run random assignment study that reducing class size did not change the way teachers taught; see Shapson et al. (1980). This is yet another example suggesting that additional resources (smaller class sizes) may not

make any difference in the absence of staff development to change how teachers make use of smaller class sizes.

[14] The Legislative Analyst's Office, 2001-02 Analysis (February 2001), at E100, says: "Under the original criteria, over half of the schools in the state were eligible to apply for the program, and 1,419 schools applied for the 430 slots available."

[15] Whether the school actually receives the additional $200 from the district is unclear, given the many opportunities for substitution. That is, it's possible that a district would on the one hand grant $200/student for II/USP, and other the other hand withdraw other special monies from the school. This possibility, a basic conclusion of public finance theory, has so far not been raised.

[16] For a preliminary assessment in three schools, see Goe (2001); for the state's own evaluation, see Research Summary Report at http://www.cde.ca.gov/iiusp/.

[17] On the problems in the California system of governance, see especially Timar (2001).

[18] See Hanushek, 1986; Hanushek et al., 1994; see also the Symposium on Primary and Secondary Education in *Journal of Economic Perspectives*, Fall 1996. For the technical rejoinder see Hedges, Laine, and Greenwald, 1994, with the conclusions in Hanushek, 1997, and Hanushek et al., 1994.

[19] Kentucky was fortunate in that a school finance court battle resulted in the scrapping of the entire state education system. Thus, policymakers were able to effectively build Kentucky's education system from scratch. This provided ample opportunities to consider the interplay of policies and funds. While Kentucky's coherence in policy is laudable, the real test of policy may lie in student outcomes, which are open to interpretation.

[20] This section of the paper draws heavily on Grubb and Huerta (2001). See also Cohen, Raudenbush, and Ball (1999), with their discussion of active versus inert resources

[21] See, for example, the discussion of joint causality in Marini and Singer (1988), particularly Mackie's (1974) "inus" condition where a variable is an "insufficient but non-redundant part of an unnecessary but sufficient condition." An unnecessary but sufficient condition might be, for example, one program among many that improves learning, and that requires both additional funding and teacher retraining. Spending on such a program would conform to the "inus" principle.

[22] See especially the articles in Berne and Picus (1994), a volume that explicitly searches for the conditions necessary for outcome equity rather than input equity; several of the articles in Monk and Underwood (1988), especially the contributions by Gamoran (1988) and by Brown (1988); the articles in Odden (1992); Odden and Busch (1998); David Monk (1994a); King and MacPhail-Wilcox (1994). Even the interchange between Hedges, Laine, and Greenwald (1994a) and Hanushek (1994), which turns largely on technical issues of how to carry out a meta-analysis, finally concludes that money might matter under some conditions — though these conditions are yet unknown. More recently Cohen, Raudenbusch, and Ball (1999) have distinguished between "inert" and "active" resources, a distinction that again clarifies that resources are likely to be ineffective ("inert") unless spent on certain practices or accompanied by other conditions to make them "active." A long-ago foray into school finance by one of us tried to distinguish equality of revenues from equality of inputs, real resources, and outputs (Grubb and Michelson, 1994, p. 6 ff), where real resources are precisely equivalent to the instructional conditions described in Section II below.

[23] Of course, there are ambiguities in some of these cases. For example, no one is in favor of "administrative bloat," or the excessive use of administrators; but the preparation of

administrators in this country is usually done in programs without adequate internships and other experienced-based learning, which is a particularly expensive form of education. Whether such expensive training is worth it in terms of the quality of schools these individuals lead would be difficult to ascertain, but there is certainly a coherent argument that districts in California now spent inadequate sums on the preparation of administrators.

[24] In addition to the work cited in footnote 10, there's a somewhat different literature examining the effects of school spending by state on subsequent earnings, but this too yields ambiguous results (Card and Krueger, 1996).

[25] See. e.g., Hedges, Laine, and Greenwald, 1994, and the conclusions in Hanushek, 1997; Hanushek et al. 1994

[26] See Mosteller, 1995; Krueger, 1997; Nye et al. 1993. While the initial assignment to kindergarten was random, there was a reassignment after kindergarten that was certainly not random. Krueger (1997) has corrected for this problem and confirmed the effects of smaller class sizes, though the effects are substantial (4 percentile points) only for the first year a student is assigned to a small class, and drop to one percentile point for subsequent years.

[27] It might be possible to develop more easily-measured proxies instead of direct observations of classroom and school practices. For example, Mayer (1999) has found that self-reported measures of behaviorist versus constructivist teaching practices are highly correlated with observation-based measures. But such proxies could be used only after they had been validated through observation, and so the process of collecting information on the way resources are used would still be difficult.

[28] The reformulation in equations (3) and then in equation (6) below continue to assume that there are measurable characteristics that affect outcomes in stable ways. Murnane and Phillips (1981), finding that teacher characteristics did not affect learning, argued that effective teachers do not have any common characteristics, except that they are able to discover early in the school year the subtle interventions, varying among students, that make for effective teaching. Whether this means that relationships like (3) are impossible, or whether it implies that a particularly difficult measure of IC is necessary, is unclear.

[29] For the critique that research on teacher effects within classrooms and research on school effects are largely independent, see Teddie and Stringfield (1993), Ch. 10.

[30] In contrast to this formulation, the conventional production function (equation 1) is a reduced form version of (2) and (3), conflating two very different processes. Equation (1) is also a reduced-form version of equations (4) – (6) below.

[31] And it could be elaborated even further; see, for example, the model in Shavelson et al. (1987), Figure 4. Unfortunately our ability to articulate models quickly outruns the data available.

[32] I have taken the idea of such an equilibrium from Harkin and Davis (1996 a, b). The idea is useful is explaining why some classes seem to "collapse"; see Grubb and Associates (1999), especially Ch. 2 and 6.

[33] If two kinds of resources are jointly necessary, then schools will be effective only when both are present — but the linear additive functional forms of most statistical work will find each of them *independently* contributing to outcomes. Interaction terms are not necessarily satisfactory because they often generate collinearity and imprecise parameter estimates.

[34] A number of districts (e.g., San Francisco, Sacramento, and Washington D.C.) apparently following a practice developed in Seattle, have required their schools to develop educational plans, and only then to generate budgets, where budget items are then linked to elements of the education plan. While this seems like a rational procedure, there have apparently been substantial difficulties both in the development of educational plans with real content, and in the development of parallel budgets — with the unsurprising result that schools within districts vary substantially in the success of this procedure.

[35] As a side note, we advocate classroom observations by insiders and outsiders as the basis for school improvement plans. Under the best conditions in England, inspections of schools and colleges by a combination of insiders and outsiders is used to identify the "corporate" or institutional methods of enhancing the quality of teaching, and then schools develop multi-year improvement plans to implement these reforms (Grubb, 2000). Of course, inspection can be used for punitive as well as supportive purposes, so it must be carefully designed. For some efforts to incorporate inspection (or school visits) into accrediting visits, see Wilson (1999).

[36] For a review of these cases see Minorini and Sugarman (1999b).

[37] See Grubb and Huerta (2001), Section II, for the justification of these different dimensions of effective instructional conditions. See also the many articles in Richardson (2001), especially those in Section 3 on different subjects.

[38] This stance relies on the *Butt* case holding the state responsible for the bankruptcy of the Richmond school district. Based on this case, the state's counter-suit in the *Williams* case — its challenge that districts rather than the state are to blame — is baseless on legal grounds. From a policy perspective, however, it's highly ineffective for the state to hold districts accountable for inadequacies when districts lack the resources to carry out reforms because of Prop 13 and inadequate state funding for both current and capital expenditures. The state's counter-suit therefore represents an example of mandates without capacity-building, and it is therefore doomed to ineffectiveness.

[39] Districts vary enormously in the ways they allocate resources to their schools. At one extreme, some districts allocate resources — a certain number of teachers, a certain number of specialist personnel (counselors, librarians, etc.) and specific budgets for supplies — to schools, which are then constrained in how they can reallocate resources. At the other extreme, some districts following the Seattle example (and including San Francisco) are moving to a method of funding individual schools by formula, where schools with higher needs (measured by income, ELL students, and disabled students) receive more money; then individual schools are able within certain limits to spend their resources as they see fit, in conjunction with an education plan. However, we know of no writing on the different methods districts use to allocate resources to schools, or any assessment of the pros and cons of different methods.

[40] The Finance and Facilities Working Group of the Joint Committee to Develop a Master Plan for Education — Kindergarten Through University recommended that there be a limited set of differential cost factors developed for the state's finance system; see Recommendation 2.1 of the Finance and Facilities Working Group K-12 Education Final Report, March 2002. However, the Working Group did not recommend developing a full set of cost adjustments because of the complexity of doing so; see Appendix A.

[41] Rhode Island has implemented the In$ite system, which collects information at the school level on expenditures for teachers, substitutes, guidance and counseling, and

many other categories of spending; then simple measures can be readily calculated such as spending per pupil and differences from average levels. It could also be extended to include numbers of teachers, salary levels, vacancies and turnover, and many other measures of school quality. See www.ridoe.net/ride_insite/. However, it should be noted that In$ite has no mechanism for taking school or district contexts into consideration, such as difference in demographics (poor vs. middle-class students), costs of resources, urbanicity, etc. It would be important to develop such a mechanism in order for such a program to be truly useful in California with its great diversity.

[42] They are (from *Rose vs. Council for Better Education, Inc.*):

i. Sufficient oral and written communication skills to enable students to function in a complex and rapidly changing civilization.
ii. Sufficient knowledge of economic, social, and political systems to enable the student to make informed choices.
iii. Sufficient understanding of governmental processes to enable the student to understand the issues that affect his or her community, state, and nation.
iv. Sufficient self-knowledge and knowledge of his or her mental and physical wellness
v. Sufficient grounding in the arts to enable each student to appreciate his or her cultural and historical heritage.
vi. Sufficient training or preparation for advanced training in either academic or vocational fields so as to enable each child to choose and pursue life work intelligently
vii. Sufficient levels of academic or vocational skills to enable public school students to compete favorably with their counterparts in surrounding states, in academics, or in the job market.

[43] There have also been some American versions of inspection systems put in place. For the School Quality Review developed in New York see Ancess (1996). Rhode Island has adopted a SALT (School Accountability for Learning and Teaching) process including a four-day visit, and Wilson (1999) has developed a procedure for school visits used by the New England Association of Schools and Colleges. Kentucky, Maine, Illinois, and Oregon have experimented with observation processes based on the British system as part of recent school reforms. In California, former Governor Pete Wilson tried to establish an Office of the Chief Inspector, modeled on the British practice, and current Governor Gray Davis has instituted a process of peer review that has rekindled debates over observation procedures (Archer, 1999).

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